



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,918	04/14/2004	Therron Powell	MSFT-2933/306027.01	6084
41505 7590 11/14/2007 WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION) CIRA CENTRE, 12TH FLOOR 2929 ARCH STREET PHILADELPHIA, PA 19104-2891			EXAMINER YU, JAE UN	
			ART UNIT 2185	PAPER NUMBER
			MAIL DATE 11/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/823,918

Applicant(s)

POWELL ET AL.

Examiner

Jae U. Yu

Art Unit

2185

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6,7 and 9-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,9-14,16-26 and 28-40 is/are rejected.
- 7) ☒ Claim(s) 6,15 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

The examiner acknowledges the applicant's submission of the amendment dated 8/31/07. At this point claims 1, 6, 7, 10, 12, 14-20, 22, 24, 26, 27, 29, 31 and 39 have been amended and claims 3-5 and 8 have been cancelled. Thus, claims 1, 2, 6-7 and 9-40 are pending in the instant application.

Response to Amendment

The examiner directs the applicant's attention to the following new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 7, 10-14, 16, 17, 19, 20, 22-26, 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al. (US 2002/0004917).

2. As per independent claims 1, 14 and 26 & dependent claim 16 and 17, Antonio et al. disclose; "a power controlled spinning-type hard drive for storing data

Art Unit: 2185

[Spinning-type hard drive with power conserving mode, Paragraph 20], wherein an entirety of the power controlled spinning-type hard drive is configured for lower power consumption **[Spinning-type hard drive with power conserving mode, Paragraph 20]** as compared to a high performance spinning-type hard drive”.

Antonio et al. do not disclose expressly, “a high performance spinning-type hard drive for storing data”.

Takahashi discloses, “in the CAV disk (e.g. a hard disk), the disk rotation speed is always constant” in column 1, at lines 45-47.

Antonio et al. and Takahashi are analogous art because they are from the same field of endeavor of hard disk accessing.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al. by including a CAV disk that rotates at a constant speed as taught by Takahashi in column 1, at lines 45-47.

The motivation for doing so would have been to perform reading/writing operations smoothly as expressly taught by Takahashi in column 1, at line 50.

Therefore, it would have been obvious to combine Takahashi with Antonio et al. for the benefit of smooth reading/writing operations to obtain the invention as specified in claims 1, 14, 16, 17 and 26.

Antonio et al. and Takahashi do not disclose expressly, "a policy manager that accesses metadata analysis of a data set to be stored into one of the high performance hard drive or the power controlled hard drive, the metadata analysis including; (a) an analysis of usage rate metadata of the data set to be stored, wherein the policy manager receives the metadata analysis and makes a determination whether the data set is to be stored in the high performance hard drive or in the low power hard drive".

Ninose et al. disclose analyzing usage rate of data to be stored, and storing frequently used data in a high performance cache in paragraph 7.

Antonio et al., Takahashi and Ninose et al. are analogous art because they are from the same filed of endeavor of memory access control.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al. and Takahashi by allowing more frequently used data to be stored into cache storage as taught by Ninose et al. in paragraph 7.

The motivation for doing so would have been that "cache storage has better access performance" as expressly taught by Ninose et al. in paragraph 7.

Therefore, it would have been obvious to combine Ninose et al. with Antonio et al. and Takahashi for the benefit of better system performance to obtain the invention as specified in claims 1, 14 and 26.

Antonio et al., Takahashi and Ninose et al. do not disclose expressly, "an analysis of content type metadata of the data set to be stored".

Gonos discloses storing data that was accessed over 30 days before the data on which the archive process is performed in separate storage in column 7, at lines 37-40.

Antonio et al., Takahashi, Ninose et al. and Gonos are analogous art because they are from the same field of endeavor of data management.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al., Ninose et al. and Takahashi by storing old data in separate storage as taught by Gonos in column 7, at lines 37-40.

The motivation for doing so would have been to remove data that does not need to be available for online access from online storage by archiving it to offline media as expressly taught by Gonos in column 1, at lines 9-14.

Therefore, it would have been obvious to combine Gonos with Antonio et al., Ninose et al. and Takahashi for the benefit of managing a large amount of data efficiently to obtain the invention as specified in claims 1, 14 and 26.

Antonio et al., Takahashi, Ninose et al. and Gonos do not disclose expressly, "an analysis of owner and consumer metadata of the data to be stored".

Malcolm et al. disclose recording “streaming audio or streaming video information” in the cache in paragraph 46, wherein the network is the Internet (Paragraph 20) and the streaming audio and video correspond to the “World Wide Web documents” from the claim. The cached data (“The first set of data”) is for delayed use by a plurality of client devices and stored in the client devices (“The second set of data”).

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. are analogous art because they are from the same field of endeavor of data access control.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al., Ninose et al., Gonos and Takahashi by recording streaming audio or video in a cache as taught by Malcolm et al. in paragraph 46.

The motivation for doing so would have been to allow delayed use of the cached data by a plurality of client devices as expressly taught by Malcolm et al. in paragraph 46.

Therefore, it would have been obvious to combine Malcolm et al. with Antonio et al., Ninose et al., Gonos and Takahashi for the benefit of delayed use of data among devices to obtain the invention as specified in claims 1, 14 and 26.

3. **Claims 7 and 19**, disclose, “the data set comprises audio or video”. **Malcolm et al. disclose recording “streaming audio or streaming video information” in the cache in paragraph 46.**

4. **Claim 20** discloses, “documents”. **Malcolm et al. disclose recording “streaming audio or streaming video information” in the cache in paragraph 46, wherein the network is the Internet (Paragraph 20) and the streaming audio and video correspond to the “World Wide Web documents” from the claim. The cached data (“The first set of data”) is for delayed use by a plurality of client devices and stored in the client devices (“The second set of data”).**

5. **Claims 10, 22 and 29** disclose “a subset of the first set of data is moved to power controlled drive in accordance with a predetermined condition, the data set moved after being stored in the high performance hard drive”. **Gonos discloses storing data that was accessed over 30 days before the data on which the archive process is performed in separate storage in column 7, at lines 37-40.**

6. **Claims 11, 23 and 30** disclose, “the predetermined condition is based on at least one of the last access date of the subset of data [**Data that was accessed over 30 days before the data on which the archive process is performed, Column 7, Lines 37-40, Gonos**], the current date, the number of times the subset of data has been requested in a period of time, the data size, users of the data, a filed name, the data types, and internal content”.

7. **Claims 12, 24 and 31** discloses, "a subset of the second set of data is moved to the high performance drive in accordance with a predetermined condition, the data set moved after being stored in the power controlled hard drive". **Gonos discloses moving archived data ("a subset of the second set of data") to another data collection in column 1, at lines 30-33. The "predetermined condition" corresponds to the "receiving request to restore" (Figure 6).**

8. **Claims 13, 25 and 32** disclose, "the predetermined condition is based on at least one of the last access date of the subset of data [**New data access request, Figure 6, Gonos**], the current date, and the number of times the subset of data has been requested in a period of time".

9. **Claim 33** discloses, "a database is divided such that a first portion of the database, having a first set of attributes [**Computer Applications, Paragraph 4, Antonio et al.**], is stored in the high performance hard drive, and a second portion of the database, having a second set of attributes [**Multimedia data, Paragraph 4, Antonio et al.**], is stored in the power controlled hard drive".

10. **Claims 2, 9, 21 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al.

Art Unit: 2185

(US 2002/0004917) as applied to claims 1, 14 and 26 above, and further in view of Dougli et al. (US 5,493,670).

11. As per claims 2, 9, 21 and 28, Antonio et al., Ninose et al, Gonos, Malcolm et al. and Takahashi disclose, "the high performance drive spins continuously [**Column 1, Lines 45-47, Takahashi**]".

Antonio et al., Ninose et al, Gonos, Malcolm et al. and Takahashi do not disclose expressly, "spinning up the power controlled drive upon receipt of a service request and spinning down the power controlled drive after providing service".

Dougli et al. disclose spinning up the disk in an active mode and spinning down the disk after period of inactivity in Abstract.

Antonio et al., Ninose et al, Gonos, Malcolm et al. and Takahashi and Dougli are analogous art because they are from the same field of endeavor of storage device accessing.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al., Ninose et al, Gonos, Malcolm et al. and Takahashi by spinning up the disk in an active mode and spinning down the disk after period of inactivity as taught by Dougli et al. in Abstract.

The motivation for doing so would have been to “maintain a balance between energy consumption and undesirable disk spin down” as expressly taught by Dougli et al. in Abstract.

Therefore, it would have been obvious to combine Dougli et al. with Antonio et al., Ninose et al, Gonos, Malcolm et al. and Takahashi for the benefit of maintaining a reasonable energy consumption level to obtain the invention as specified in claims 2, 9, 21 and 28.

12. Claim 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al. (US 2002/0004917) as applied to claims 1 and 14 above and further in view of Lu et al. (US 6,684,121).

13. As per claim 18, Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. disclose the server system and the method recited in claims 1 and 14.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. do not disclose expressly, “the first set of data comprises data that has one of a creation date and a modification date after a predetermined date, and the second set of data comprises data that has one of a creation date and a modification data before the predetermined date”.

Lu et al. disclose storing information that was created before the predetermined date in a remote archival storage in column 11, at lines 26-29.

Antonio et al., Takahashi, Ninose et al., Gonos, Malcolm et al. and Lu et al. are analogous art because they are from the same field of endeavor of data management.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. by storing data that was created before the predetermined data in a remote archival storage as taught by Lu et al. in column 11, at lines 26-29.

The motivation for doing so would have been to prevent the information stored in databases from exceeding the storage space of the individual storage devices as expressly taught by Lu et al. in column 11, at lines 35-39.

Therefore, it would have been obvious to combine Lu et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. and Takahashi for the benefit of preventing low storage space to obtain the invention as specified in claim 18.

14. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al. (US 2002/0004917) as applied to claim 1 above, and further in view of Hudson et al. (US 2002/0059440).

Art Unit: 2185

15. As per **claim 34**, Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. disclose, “the first set of attributes” and “the second set of attributes” (Please refer to the claim 33 rejection above).

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. do not disclose expressly, “meta-directives”.

Hudson et al. discloses, “meta-directives” in paragraphs 40 and 41.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. and Hudson et al. are analogous art because they are from the same field of endeavor of accessing storage elements.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. by including meta-directives as taught by Hudson et al. in paragraphs 40 and 41.

The motivation for doing so would have been to specify the logical inclusion of additional control files as expressly taught by Hudson et al. in paragraph 41.

Therefore, it would have been obvious to combine Hudson et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. for the benefit of specifying the logical inclusion of additional control files to obtain the invention as specified in claim 34.

16. Claims 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al. (US 2002/0004917) as applied to claim 1 above, and further in view of Wang et al. (US 6,834,326).

17. As per claims 35 and 36, Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. disclose, "power management directives [**Spinning disk at power conserving speed, Abstract, Antonio et al.**] control the storage of data across multiple storage devices".

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. do not disclose expressly, one of "a remote storage area network (SAN)" and "a network attached storage (NAS)".

Wang et al. disclose, "a network-attached storage" in column 1, at line 30.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al., and Wang et al. are analogous art because they are from the same field of endeavor of storage devices.

At the time of the invention it would have been obvious to combine Wang et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. by including "a network-attached storage" as taught by Wang et al. in column 1, at line 30.

The motivation for doing so would have been fast, scalable and high-bandwidth data access as expressly taught by Wang et al. in column 1, at lines 30-31.

Therefore, it would have been obvious to combine Wang et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. for the benefit of fast, scalable and high-bandwidth data access to obtain the invention as specified in claims 35 and 36.

18. As per **claim 37**, Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. discloses, "power management directives are used to control power management events [**Spinning disk at power conserving speed, Abstract, Antonio et al.**] in storage devices".

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. do not disclose expressly, one of "a remote storage area network (SAN)" and "a network attached storage (NAS)".

Wang et al. disclose, "a network-attached storage" in column 1, at line 30.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. and Wang et al. are analogous art because they are from the same field of endeavor of storage devices.

At the time of the invention it would have been obvious to combine Wang et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. by including "a network-attached storage" as taught by Wang et al. in column 1, at line 30.

The motivation for doing so would have been fast, scalable and high-bandwidth data access as expressly taught by Wang et al. in column 1, at lines 30-31.

Therefore, it would have been obvious to combine Wang et al. with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. for the benefit of fast, scalable and high-bandwidth data access to obtain the invention as specified in claims 37.

19. Claims 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Antonio et al. (US 2002/0097515) in view of Takahashi (US 5,878,020), Ninose et al. (US 2003/0140198), Gonos (US 6,901,418) and Malcolm et al. (US 2002/0004917) as applied to claim 1 above, and further in view of Yagawa (US 2006/0015946).

20. As per claim 38, Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. disclose the server system recited in claim 1.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. do not disclose expressly, "a redundant array of independent disks (RAID)".

Yagawa discloses, "RAID" in paragraph 44.

Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. and Yagawa are analogous art because they are from the same field of endeavor of storage accessing.

At the time of the invention it would have been obvious to modify Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. by including "RAID" as taught by Yagawa in paragraph 44.

The motivation for doing so would have been to improve reliability of the stored data as expressly taught by Yagawa in paragraph 44.

Therefore, it would have been obvious to combine Yagawa with Antonio et al., Takahashi, Ninose et al., Gonos and Malcolm et al. for the benefit of data reliability to obtain the invention as specified in claim 38.

21. **Claim 39** discloses, "the second set of data is distributed across the redundant array using a stripping algorithm [**Paragraph 47, Yagawa**]".

22. **Claim 40** discloses, "the stripping algorithm reduces the power up impact to a smaller set of drives upon data access operations". **Yagawa discloses "the stripping algorithm" that inherently reduces the power up impact to a smaller set of drives because the data is spread across multiple power-controlled disks.**

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

A. Allowable Subject Matter

1. **Claims 6, 15 and 27** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
2. The primary reasons for allowance of **claims 6, 15 and 27** in the instant application is the combination with the inclusion in these claims that **"wherein the data set to be stored is placed on the power controlled spinning-type hard drive after classification of the data into the characteristics of a fully distinguished file name, creator, owner, consumer, distribution lists, access control list detail, certificates, signature attributes, protocols, content resolution, encoding technique, encryption technique, key properties, internal subjects, keywords, content tags,**

assemblies, associations to other files, replication, caching, directory and related database extensible properties.” The prior art of record neither anticipates nor renders obvious the above recited combination.

3. As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 C.F.R. § 1.111(b) and § 707.07(a) of the MPEP.

B. Claims No Longer in the Application

Claims 3-5 and 8 have been cancelled.

C. Claims Rejected in the Application

Claims 1, 2, 7 and 9-14, 16-26 and 28-40 have received a second action on the merits and are subject of a second action final.

D. Direction of Future Remarks

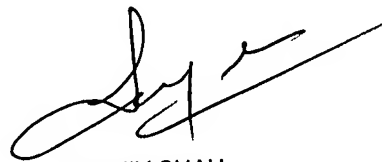
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jae Un Yu who is normally available from 9:00 A.M. to 5:30 P.M. Monday thru Friday and can be reached at the following telephone number: (571) 272-1133.

If attempts to reach the above noted examiner by telephone are unsuccessful, the Examiner's supervisor, Sanjiv Shah, can be reached at the following telephone number: (571) 272-4098.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/12/2007

Jae Un Yu
Art Unit 2185



SANJIV SHAH
SENIOR PATENT EXAMINER
TECHNOLOGY CENTER 2100